WHAT IS CLAIMED IS:

1. A process for treating a fluorine compound-containing gas, which comprises contacting a gas stream containing at least one of compounds of carbon and fluorine, compounds of carbon, hydrogen and fluorine, compounds of sulfur and fluorine, compounds of nitrogen and fluorine and compounds of carbon, hydrogen, oxygen and fluorine with a catalyst containing at least one of alumina, titania, zirconia and silica in the presence of steam, thereby hydrolyzing the fluorine compound to convert the fluorine of the fluorine compound to hydrogen fluoride.

2. A process according to Claim 1, wherein the catalyst is selected from the group consisting of alumina, titania, zirconia, silica, a mixture of titania and zirconia, a mixture of alumina and magnesia, a mixture of alumina and titania and a mixture of alumina and silica.

3. A process according to Claim 1, wherein the catalyst comprising a mixture of alumina and titania is in a weight ratio of alumina to titania of 75-98 : 25-2.

4. A process according to Claim 3, wherein the catalyst comprising a mixture of alumina and titania is a catalyst prepared from boehmite as an alumina raw material.

5. A process according to Claim 3, wherein the catalyst comprising a mixture of alumina and titania is a catalyst prepared from titanium sulfate as a titania raw

material.

6. A process according to Claim 3, wherein the catalyst comprising a mixture of alumina and titania is a catalyst prepared by adding sulfuric acid thereto during the catalyst preparation.

7. A process according to Claim 3, wherein the catalyst comprising a mixture of alumina and titania contains sulfate ions.

8. A process according to Claim 1, wherein the catalyst comprises a mixture of alumina, titania and at least one member selected from the group consisting of zirconia, tungsten oxide, silica, tin oxide, ceria, bismuth oxide, nickel oxide and boron oxide and having a weight ratio of at least one member selected from the group consisting of zirconia, tungsten oxide, silica, tin oxide, ceria, bismuth oxide, nickel oxide and boron oxide to sum total of alumina and titania being 0.1-10 : 99.9-90.

9. A process for treating a fluorine compound-containing gas, which comprises contacting a gas stream containing a compound comprising carbon and fluorine with a catalyst comprising a mixture of alumina, titania and zirconia, and having a weight ratio of alumina to titania being 75-98 : 25-2 and a weight ratio of zirconia to sum total of alumina and titania being 2-10 : 98-90, thereby hydrolyzing the compound comprising carbon and fluorine.

10. A process according to Claim 1, wherein the catalyst comprises a mixture of alumina and at least one

member selected from the group consisting of zinc oxide, nickel oxide, iron oxide, tin oxide, cobalt oxide, zirconia, ceria, silica and platinum and has an atomic ratio of aluminum of the alumina to at least one element of at least one of the member except for platinum being 50-99 : 50-1, and the content of platinum being 0.1 to 2% by weight per 100% by weight of the alumina.

11. A process according to Claim 10, wherein the catalyst further contains 0.1 - 20% by weight of sulfur on the basis of the catalyst.

12. A process according to Claim 12, wherein the catalyst containing sulfur comprises a mixture of alumina and nickel oxide.

13. A process for treating a fluorine compound-containing gas, which comprises contacting a gas stream containing a fluorine compound comprising C_2F_6 with a catalyst comprising alumina and titania having a weight ratio of alumina to titania being 65-90 : 35-10, thereby hydrolyzing the fluorine compound to convert the fluorine in the gas stream to hydrogen fluoride.

14. A process for treating a fluorine compound-containing gas, which comprises contacting a gas stream containing a fluorine compound comprising C_2F_6 with a catalyst comprising alumina, titania and zirconia and having a weight ratio of alumina to titania being 65-90 : 35-10 and a weight ratio of zirconia to sum total of alumina and titania being 2-10 : 98-90, thereby hydrolyzing the fluorine compound to convert the fluorine

in the gas stream to hydrogen fluoride.

15. A process for treating a fluorine compound-containing gas, which comprises contacting a gas stream containing a fluorine compound comprising at least one member selected from the group consisting of C_2F_6, CF_4, C_4F_8 and CHF_3 with a catalyst comprising a mixture of alumina and zinc oxide and having an atomic ratio of aluminum to zinc being 90-70 : 10-30, thereby hydrolyzing the fluorine compound to convert the fluorine in the gas stream to hydrogen fluoride.

16. A process for treating a fluorine compound-containing gas, which comprises a gas stream containing a fluorine compound comprising at least one member selected from the group consisting of C_2F_6, CF_4, C_3F_8, C_4F_8, CHF_3, NF_3 and SF_6 with a catalyst comprising a mixture of alumina and nickel oxide and having an atomic ratio of aluminum to nickel being 95-60 : 5-40, thereby hydrolyzing the fluorine compound to convert the fluorine in the gas stream to hydrogen fluoride.

17. A process for treating a fluorine compound-containing gas, which comprises contacting a gas stream containing a fluorine compound comprising C_4F_8 with a catalyst comprising a mixture of alumina and nickel oxide, thereby hydrolyzing the fluorine compound to convert the fluorine in the gas stream to hydrogen fluoride.

18. A process according to Claim 16, wherein a reaction temperature is 650° - 800°C for the hydrolysis

of C_2F_6, 600° - 800°C for the hydrolysis of CF_4 and CHF_3, 700° - 800°C for the hydrolysis of C_3F_8, 650°C - 800°C for the hydrolysis of C_4F_8, 600° - 800°C for the hydrolysis of NF_3 and 500° - 800°C for the hydrolysis of SF_6.

19. A process according to Claim 15, wherein a reaction temperature is 650° - 800°C for the hydrolysis of C_4F_8 and 600° - 800°C for the hydrolysis of CF_4 and CHF_3.

20. A process for treating a fluorine compound-containing gas, which comprises a hydrolysis step of contacting a gas discharged from a semiconductor-etching or cleaning step using a gas stream containing at least one fluorine compound selected from the group consisting of compounds of carbon and fluorine, compounds of carbon, hydrogen and fluorine, compounds of sulfur and fluorine, compounds of nitrogen and fluorine and compounds of carbon, hydrogen, oxygen and fluorine, after addition of air and steam to the gas, with a catalyst comprising at least one of alumina, titania, zirconia and silica, thereby hydrolyzing the fluorine compound to convert the fluorine in the gas to hydrogen fluoride, as a poststep to the semiconductor-etching or cleaning step.

21. A process according to Claim 20, which further comprises an alkaline washing step of contacting the gas from the hydrolysis step with an alkaline washing solution, thereby washing the gas as a poststep to the hydrolysis step.